system itself in such a way that it will meet the needs of underserved areas. Neither the characteristics of the system, nor the human needs of the persons serving or to be served, nor the cultural or geographical remoteness of the areas to be served are to be ignored. Some kind of a mix of personnel and resources has to be achieved for each underserved area.

It is suggested that a concept of critical masses might be a useful device to accomplish the above. A critical mass could be defined as the minimum mix of the essential components needed to make a reaction go spontaneously or to make a service viable under the given conditions. Such an approach would make possible the introduction of all pertinent professional, physical, human and cultural factors in appropriate amounts and combinations to assure viability. The concept could be applied at any level of the health care system. The goal would be to plan so as to assure viability for the segment of the health care system in relationship to the system as a whole.

If the time has come to develop a more sophisticated, more realistic and more human approach to planning for the better distribution of health care services, the critical mass approach would seem to be a possibility worth exploring.

—MSMW

Gallium-67: Broad Spectrum Diagnostic?

THE GLORIOUS EXPECTATIONS for gallium-67 (^{67}Ga) as a tumor-imaging agent have been tarnished in part by its lack of specificity. Investigators in search of a "silver bullet" for detection of neoplasia were dismayed to find ^{67}Ga-citrate localizing in such oncologically disinteresting places as abscesses and recent surgical incisions. It remained for a small group of relatively broad-minded investigators to attempt to exploit this lack of specificity.

^{67}Ga-citrate does localize consistently in areas of inflammation due to infection. This aspect of ^{67}Ga has been well known in the nuclear medicine community for many years. Published documentation of such findings was made by Lavender et al in reporting ^{67}Ga uptake in one breast and one lung abscess,[1] and also by Lomas et al in a later publication noting ^{67}Ga uptake in hepatic abscesses.[2] Unpublished documentation abounds. However, the significance of these findings was never fully appreciated.

The thought of using ^{67}Ga specifically for imaging inflammatory lesions was first advocated by Lomas et al,[3] who found ^{67}Ga highly useful in the detection of empyema of the gallbladder. More recently, Littenberg and associates from San Diego have advocated the general use of ^{67}Ga-citrate for diagnosis of occult abscesses in patients with sepsis. Interestingly, one of their patients had pyelonephritis and unilateral renal localization on the radiogallium scan.

The latest contribution by Kessler and his associates, published elsewhere in this issue of THE WESTERN JOURNAL OF MEDICINE is a logical progression of this theme. While the authors admonish at the outset that their results are preliminary, their interesting presentation cannot escape some criticism on scientific grounds. They present a technique they hope "may prove useful in differentiating between upper and lower tract infections," but they present no valid controls—that is, patients with only lower tract infections. If, in fact, it turns out that a significant portion of patients with lower urinary tract infections have positive scans, the utility of the technique for this application is open to serious question.

Beyond the merits of this specific application, however, the broader question remains. Is specificity really necessary in a diagnostic agent such as ^{67}Ga? We have learned to live quite well with brain scanning, lung scanning and bone scanning, all of which are outstandingly nonspecific. We accept the role of the scintigram in such instances to locate rather than to identify the disease process. There is no law (as yet) which restricts us from use of more specific procedures, once the location of the abnormality has been identified. So be it with ^{67}Ga-citrate.

PAUL B. HOFFER, MD
Director of Nuclear Medicine
Department of Radiology
University of Chicago,
Pritzker School of Medicine

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